



THE SCIENCE OF READYSM

SOUTH 4 GROUP FIRE

Port Neches, TX

Preliminary Community Air Monitoring

Data Summary

December 14, 2019

Project #112312

1.0 Introduction

On November 27, 2019 at approximately 04:00 Central Standard Time (CST), TPC Group requested that CTEH® provide air monitoring and analytical air sampling support in response to a tank fire at the TPC Group facility located in Port Neches, Texas. CTEH® arrived on-site on November 27, 2019 at 08:00 CST and began real-time air monitoring and analytical air sampling operations at approximately 10:00 CST.

This report summarizes real-time air monitoring data collected from December 13, 2019 06:00 CST to December 14, 2019 06:00 CST within the community.

2.0 Air Monitoring and Sampling Methods

CTEH® developed and implemented an Air Sampling Analysis Plan (SAP) to document and quantify the potential release of fugitive emissions from the incident at ground level. The SAP has been approved by local, state, and federal representatives of the on-site Unified Command (UC). In accordance with the SAP, sustained 1,3-butadiene detections of 0.5 ppm or greater and volatile organic compound (VOC) detections of 5.0 ppm or greater in the community are to be communicated to the Federal On-Scene Coordinator.

Real-time air monitoring was conducted for 1,3-butadiene, benzene, styrene, nitrogen dioxide (NO₂), volatile organic compounds (VOCs), and atmospheric flammability measured as the percentage of the lower explosive limit (%LEL). Real-time air monitoring was conducting using handheld instruments including Drager X-PID 8500, MultiRAEs, UltraRAEs, and Gastec GV-100 handheld piston pumps (with colorimetric tubes). All instrumentation was calibrated at least once per day or per manufacturer's recommendations. Target analytes were measured as listed in **Table 1** below. Roaming air monitoring was performed in community areas with handheld instruments. All handheld air monitoring was conducted in the breathing zone.

In addition, CTEH® also collected analytical air samples for analysis of airborne VOCs and asbestos in the surrounding community at the time of this report. These samples are sent to a 3rd-party accredited laboratory for subsequent chemical analysis. Air sampling data will be summarized in separate reports.

3.0 Air Monitoring Results

Attachment A provides maps of the locations of handheld air monitoring and analytical air sampling in community residential areas, as well as a map of zones within the community. A cumulative summary of the community handheld air monitoring results is presented in **Table 1**. **Table 2** and **Table 3** include a subset of the cumulative data provided in Table 1 and summarize the results of handheld air monitoring conducted in Zones 1 and 8, respectively.

Table 1: Community Handheld Real-Time Air Monitoring Results (All Zones)

Analyte	Instrument	# of Readings	# of Detections	Range*
1,3-Butadiene	Drager X-PID 8500	96	16	0.07 - 0.17 ppm
	Gastec #174LL	1	1	0.1 ppm
	UltraRAE	914	11	0.01 - 0.57 ppm
Benzene	Drager X-PID 8500	30	0	< 0.02 ppm
%LEL	MultiRAE	506	0	< 1 %
Nitrogen Dioxide (NO ₂)	MultiRAE	52	0	< 0.1 ppm
Styrene	Drager X-PID 8500	5	0	< 1 ppm
VOCs	MultiRAE	990	8	0.1 - 0.3 ppm

*If no detection was observed, the instrument detection limit preceded by a "<" symbol is listed. These data have not undergone QA/QC and should be considered preliminary at this time.

Table 2: Zone 1 Community Handheld Real-Time Air Monitoring Results[‡]

Analyte	Instrument	# of Readings	# of Detections	Range*
1,3-Butadiene	Drager X-PID 8500	31	15	0.07 - 0.17 ppm
	Gastec #174LL	1	1	0.1 ppm
	UltraRAE	327	2	0.02 - 0.25 ppm
Benzene	Drager X-PID 8500	18	0	< 0.02 ppm
%LEL	MultiRAE	158	0	< 1 %
NO ₂	MultiRAE	15	0	< 0.1 ppm
VOCs	MultiRAE	351	3	0.1 - 0.3 ppm

*If no detection was observed, the instrument detection limit preceded by a "<" symbol is listed. These data have not undergone QA/QC and should be considered preliminary at this time.

‡These results are a subset of the results provided in Table 1.

Table 3: Zone 8 Community Handheld Real-Time Air Monitoring Results[‡]

Analyte	Instrument	# of Readings	# of Detections	Range*
1,3-Butadiene	Drager X-PID 8500	49	1	0.13 ppm
	UltraRAE	274	3	0.01 - 0.04 ppm
Benzene	Drager X-PID 8500	6	0	< 0.02 ppm
%LEL	MultiRAE	147	0	< 1 %
NO ₂	MultiRAE	37	0	< 0.1 ppm
VOCs	MultiRAE	319	0	< 0.1 ppm

*If no detection was observed, the instrument detection limit preceded by a "<" symbol is listed. These data have not undergone QA/QC and should be considered preliminary at this time.

‡These results are a subset of the results provided in Table 1.

One reading of 1,3-butadiene reported during this air monitoring period exceeded the UC-approved action level of 0.5 ppm, at 0.57 ppm. Consecutive readings for 1,3-butadiene in the same location less than 15 minutes later had no detections. In addition, no detections of benzene, %LEL, NO₂, or styrene were observed in the community during this reporting period. VOCs were detected infrequently, and all detections of VOCs were reported below the action level for VOCs approved by UC.

4.0 Weather Conditions

Attachment B contains a wind rose depicting wind speed and direction for this reporting period. Data were acquired from the Nederland High School (C1035) meteorological station located on 2108 N 18th St approximately 4 miles west of the incident site.

Attachment A

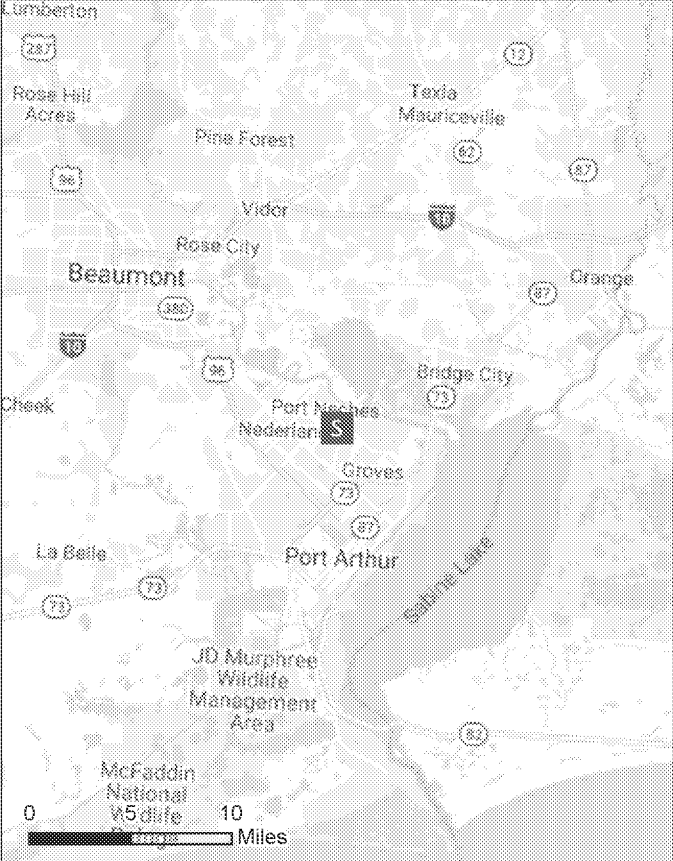
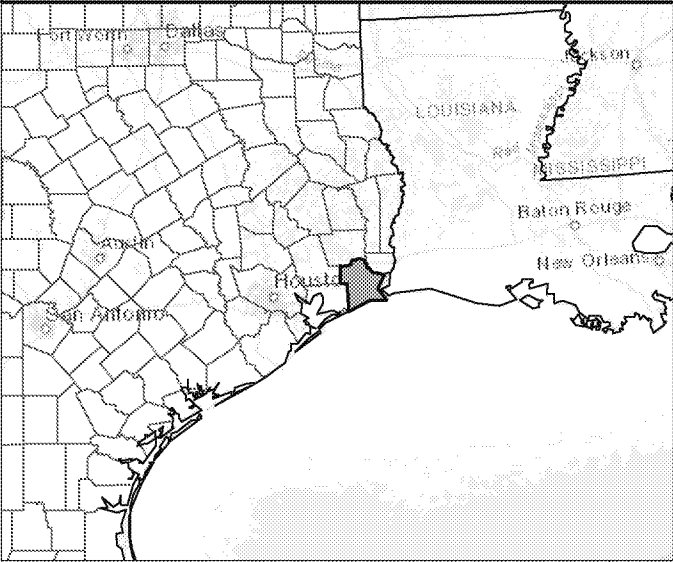
CTEH Community Air Monitoring Locations



Site Location
South 4 Group Fire | Port Neches, TX



Project: 112312
Client: TPC Group
City: Port Neches, TX
County: Jefferson



S Site Location



Handheld Real-Time Community Monitoring Locations

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson



COORDINATE SYSTEM: NAD 1983 UTM Zone 15N DATUM: North American 1983

LAST UPDATED: 12/14/2019 10:38:30 AM



Handheld Real-Time Community Monitoring Locations (Benzene)

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson



COORDINATE SYSTEM: NAD 1983 UTM Zone 15N DATUM: North American 1983

LAST UPDATED: 12/14/2019 10:19:48 AM



Handheld Real-Time Community Monitoring Locations (1,3-Butadiene Detections)

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson



COORDINATE SYSTEM: NAD 1983 UTM Zone 15N DATUM: North American 1983

LAST UPDATED: 12/14/2019 10:17:30 AM



Handheld Real-Time Community Monitoring Locations (1,3-Butadiene Non Detects)

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson





Handheld Real-Time Community Monitoring Locations (%LEL)

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson



COORDINATE SYSTEM: NAD 1983 UTM Zone 15N DATUM: North American 1983

LAST UPDATED: 12/14/2019 10:21:19 AM



Handheld Real-Time Community Monitoring Locations (NO₂)

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson





Handheld Real-Time Community Monitoring Locations (Styrene)

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson





Handheld Real-Time Community Monitoring Locations (VOCs)

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson



COORDINATE SYSTEM: NAD 1983 UTM Zone 15N DATUM: North American 1983

LAST UPDATED: 12/14/2019 10:34:26 AM



Analytical Sampling Locations

South 4 Group Fire | Port Neches, TX | 12/13/2019 06:00 - 12/14/2019 06:00 CST



Project:112312
Client: TPC
City: Port Neches, TX
County: Jefferson



Site Location

Air Sampling Location

COORDINATE SYSTEM: NAD 1983 UTM Zone 15N DATUM: North American 1983

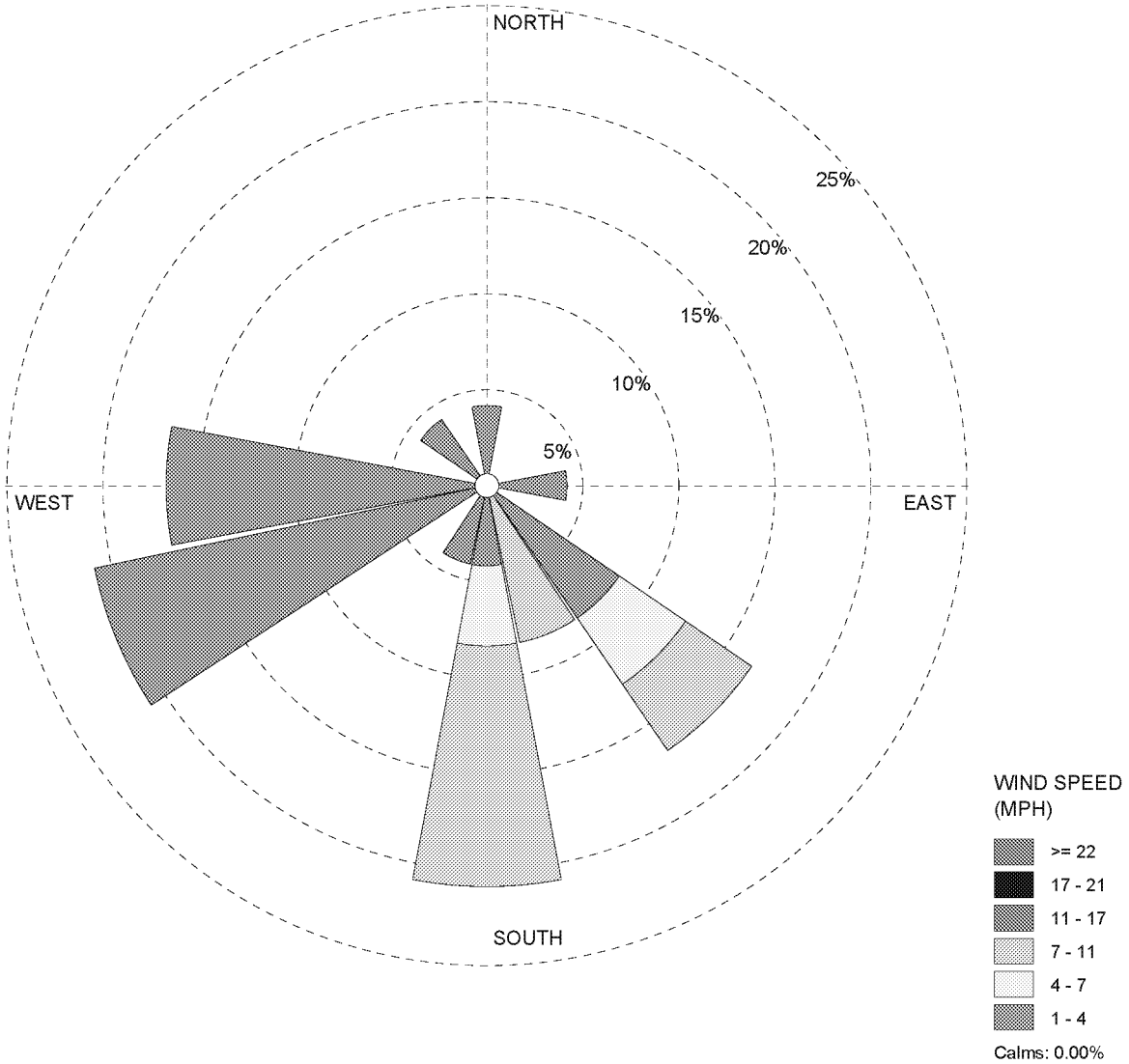
LAST UPDATED: 12/14/2019 10:46:17 AM

Attachment B

Meteorological Conditions

WIND ROSE PLOT:
TCEQ CAMS 1035

DISPLAY:
Wind Speed
Direction (blowing from)



COMMENTS:	DATA PERIOD: Start Date: 12/13/2019 - 06:00 End Date: 12/14/2019 - 05:00	COMPANY NAME: CTEH, LLC	
	CALM WINDS: 0.00%	TOTAL COUNT: 24 hrs.	PROJECT NO.: 112312
	AVG. WIND SPEED: 3.88 MPH	DATE: 12/14/2019	

WRPLOT View - Lakes Environmental Software